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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,872	01/23/2002	James N. Walpole	0003.0001.co	9204
29127	7590	10/27/2003	EXAMINER	
HOUSTON ELISEEVA 4 MILITIA DRIVE, SUITE 4 LEXINGTON, MA 02421			NGUYEN, TUAN N	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 10/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/055,872

Applicant(s)

WALPOLE ET AL.

Examiner

Tuan N Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected..
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 17-21, 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, for example.

Claim 17 being indefinite when reciting “... *an output mirror* through which a laser output beam is coupled; and *a spatial mode filter, between the output mirror and the front facet of the chip*, ...” – it is vague if the output mirror is a part of the semiconductor or an external mirror where laser beam is coupled, and further indefinite as to the spatial mode filter – (is it an external filter which is not shown in any drawings, or is the fiber that has spatial mode filter lying between the front facet of the chip and the output mirror?). It is not clear the significant of the “lowest order spatial mode that is greater than 5 micrometer in diameter” and the “overmoded” recited in claim 14. There is insufficient structure and functional relationship which render the claims vague and indefinite. Claims 18-21 and 25-27 are rejected base on the same reason.

### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

4. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Alphonse (US 6430207) (09/205 575) and/or in view of Alphonse (US 6339606).

With respect to claims 1, 7, 11, 12, 17, 22-27 Alphonse '606 shows in (figure 7: 197, 197a) an edge-emitting, stripe-waveguide semiconductor chip having a first and second tilted faceted generating a lowest order spatial mode (Col 1: 44; Col 2: 10-35, 30-35), with the first and second fiber pigtail positioned opposite and butt coupled to the first and second tilted facet. Alphonse '207 discloses (Col 10-20-25) laser with transverse mode filter and shows an semiconductor optical system having an edge emitting semiconductor having a first and second tilted facet and first and second pigtail fibers (F 6: 410, 411, 412, 440, 450, 420, 420a/b, 430, 430a/b, 460)(Fig 10: 282, 231) (F7, F8, F3) and highly reflecting back facet and output mirror and filter between output facet and mirror (Col 1-2: 62-7) (F 1: 100, 110, 120, 130) (F9, F10). Since semiconductor laser generate lower order spatial mode, and a width of 1-5um (Col 2: 11),

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it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claims 2-4, 8-10, 18, 19, 21 Alphonse '207 shows in (F 3, 6-10) and Alphonse '606 shows in (Fig3-4,7) (Col 4: 35-43) the tiled facet angles at a given degree, spatial mode, and strip length to prevent self oscillation in the chip. Discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claims 5-6, 15-16, 20 Alphonse '207 shows in (Figs: 3, 6-10)discloses the first and second fiber single mode and spatial multi mode in (Col 1: 35-60) (Col 4:50-56) and single mode fiber grating (Fig 6: 420, 430; Fig 9: 730).

With respect to claims 13, 14 Alphonse '207 discloses the tilted facet, anti reflection coating, and over mode (F 9)(Col 8: 53-67; Col 9: 0-30).

#### ***Citation of Pertinent References***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show the product of the instant invention.

Alphonse (US 6417524), Alphonse (US 6184542), Alphonse et al. (US 4821277) Toda et al. (US 4793679), disclose tilted semiconductor.

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***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8592 for regular communications and (703) 746-8592 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long, sweeping horizontal stroke extending to the right.A handwritten signature in black ink, appearing to read 'Paul Ip', with a stylized, cursive script.

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